

## **REMARKS**

Claim 1 has been amended to refer to the claimed mixtures as “free of dinol type explosive”, which is supported at least on page 2, first paragraph of the “Disclosure of the Invention” and the discussion therein of “the primary explosive of the dinol type is replaced by a high explosive”.

Otherwise, claim 1 has been amended to use alternate language to refer to the same nitroester or nitramine containing high explosive, supported by the application as filed, and oxidizing agent, as supported by page 3, line 6. With respect to the asserted issue of the terms “sensibilizer” and “derivatives of tetrazole” as used in the claims, Applicants note that the amendment to the claim is made for business reasons and commercially contemplated embodiments of the invention rather than in acquiescence to any rejection of record.

Claim 2 has been amended to conform to changes in claim 1.

The amendments to claims 5 and 17 may be viewed in combination as using alternative language to encompass embodiments of the invention that contain nitrocellulose. Claim 13 has been similarly amended.

No new matter has been introduced, and entry of the amendments is respectfully requested.

### ***Restriction***

Applicants acknowledge the assertion of claims 19-22 as lacking the same special technical feature, defined as a contribution to the art, as claims 1-3, 5, 7, and 11-18, presumably based upon the assertion of claims 1-3, 5, 7, and 11-18 as unpatentable over Mei et al. (‘252) in view of Erickson et al. and Mei et al. (‘736) as presented in the Action. Applicants respectfully point out that but for this assertion, claims 19-22 are directed to combinations comprising the products of claims 1-3, 5, 7, and 11-18 and so would not lack unity therewith should claims 1-3, 5, 7, and 11-18 present a special technical feature.

Based on the above, Applicants confirm the election of claims 1-3, 5, 7, and 11-18 by original presentation and respectfully request the rejoinder of claims 19-22 upon the presence of unity with the elected claims.

***Rejection under 35 U.S.C. § 112, second paragraph***

Claims 1-3, 5, 7, and 11-18 have been rejected under 35 U.S.C. § 112, second paragraph as allegedly indefinite for the recitation of particular terms. Applicants have carefully reviewed the statement of the rejection and believe that the claims as amended are definite for the following reasons.

With respect to “high explosive”, the phrase has been amended in claim 1 to refer to a nitroester or nitramine containing explosive, which is supported by the claim at least as previously presented. The fact that there are many compounds that may contain nitroesters or nitramine introduces no ambiguity into the claim because only those compounds that are explosives are within the scope of the language used. Therefore, a large polymer that contains one nitrate group would not be within the scope of the language unless it was an explosive. Moreover, the possibility of liquid explosives within the scope of the language used introduces no ambiguity because the claims are not limited to solids.

With respect to “derivatives of tetrazole” and “sensibilizer”, Applicants note that the terms have been removed from claim 1 in favor of simply referring to tetrazene. This change is made for reasons related to business considerations and to expedite prosecution of the instant application rather than in acquiescence to the instant rejection.

Regarding “nitrocellulose”, Applicants confirm the Examiner’s understanding that nitrocellulose may serve as the explosive and/or the bonding agent. Therefore, the term has been removed from claims 5 and 12 in favor of the revised presentation in claims 13 and 17, which is intended to encompass the same concept. Applicants disagree, however, with the statement that “if one compound may be present as more than one thing, then surely others may also be similarly used.” While nitrocellulose may serve as the explosive and/or the bonding agent, it is illogical, and unnecessary, to extend that observation to other components of the claimed mixtures.

Moreover, the presence of nitrocellulose as explosive and/or the bonding agent presents no confusion as to the amounts for the stated categories of components. This follows because the bonding agent is “optionally” present, and so if the explosive is nitrocellulose, the bonding agent is “optionally” present such that there may, or may not, be the presence of an additional “0.1 to 5 weight percent of” nitrocellulose as a bonding agent.

With respect to claims 13, 14, 17, and 18, Applicants point out that the claims are not limited to mixtures of solids but rather include mixtures of solids and a solvent as presented in these claims. To the extent that the latter mixtures may be an “intermediate” as presented in the Action, Applicants believe the answer to the question as “yes”.

As for the recitation of “diammo-copper nitrate”, claim 1 has been amended to present the same subject matter as a chemical formula without altering the scope of the claim.

In light of the above, Applicants respectfully submit that the claims are in compliance with 35 U.S.C. § 112, second paragraph, and withdrawal of the rejection is respectfully requested.

***Rejection under 35 U.S.C. § 112, first paragraph***

Claims 1-3, 5, 7, and 11-18 have been rejected under 35 U.S.C. § 112, first paragraph as allegedly containing subject matter not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Applicants have carefully reviewed the statement of the rejection and respectfully traverse as follows.

The current statement of the rejection appears to confirm that the instant rejection is one based upon an alleged “lack of enablement” for the full scope of the claims rather than an “inadequate written description” *per se*. The distinction is important because adherence to the standards of *In re Wands* includes according weight to the state of the art and the relative skill of those in the art.

Additionally, and as previously noted, Applicants again point out that MPEP 2164.04 sets forth the standard of *In re Marzocchi* (169 USPQ 367 (CCPA 1971)) where claims must be taken as being enabled unless there is reason to doubt the objective truth of the statements of an

application in support of enablement. Applicants respectfully submit that no adequate reason have been provided in the instant rejection.

For example, and with respect to the assertions based upon a comparison of the working examples and the claims, Applicants respectfully point out that the Examiner has provided no objective reason to doubt that the range of 5 to 40% of tetrazene and the use of nitrocellulose or hexanitromannite or other nitroester or nitramine containing explosive in the invention will function as claimed. Contrary to the alleged issue of “whether they even work” as stated in the rejection, Applicants respectfully submit that it is the burden of the *prima facie* case to provide objective reasons why they would not work. As disclosed in the cited U.S. Patent to Mei et al. (‘252), the components of explosives, including PETN, gun powder, hexanitromannitol, nitrocellulose, or other nitrate ester fuel; tetrazene; boron; and an oxidizing agent like iron oxide are not unexpected components of a composition used for priming (see column 3, lines 38-43).

Therefore, and contrary to the allegation of “great unpredictability” in the rejection, the instant invention does not require undue experimentation to make and use. This follows because no more than repetitive, and thus routine, experimentation is needed to make and test the claimed invention with the various percentages of components. Where is the undue experimentation to combine the components to arrive at the claimed mixtures? Applicants respectfully submit that repetitive and routine experimentation is the very opposite of “undue experimentation” such that where the experimentation is repetitive and routine, there is no basis to support an allegation of lack of enablement.

Furthermore, and with respect to the alleged issue of “criticality” as to the particulars of the claimed ignition mixtures, Applicants respectfully note that claim 1 of Mei et al. (‘252) recites a “composition comprising diazodinitrophenol, iron oxide, and boron” without any limitation as to percentages of the various components. This is in the context of a single working example (column 3, lines 8-37). Clearly, there was no concern with the “criticality” of the percentages of various components in claim 1 of that patent.

Applicants note that the repetitive experimentation also addresses the possibility of inoperative embodiments of the invention, with which the statement of the rejection appears to be concerned in the case of misfiring ammunition on the battlefield, during hunting, or in other situations. This follows because inoperative embodiments of the claimed invention, if they exist, may be readily identified by routine experimentation prior to use in the situations alleged

to create a lack of enablement. As the Examiner is no doubt aware, patent law permits inoperative embodiments, if they exist, to be within the scope of patent claims.

To the extent that the statement of the rejection relies upon the possibility of mixtures that malfunction and result in injury or death, Applicants respectfully submit that the concerns are misplaced. Priming mixtures that will not prime ignition, and thus not trigger the firing of ammunition, occur even with current ammunition that is used by the military and civilians alike. Therefore, the art accepts the occurrence of misfires at some frequency such that the concern presented in the rejection is misplaced relative to the skill and understanding in the art.

Priming mixtures that spontaneously ignite, while dangerous, are of course readily identified and not used based upon routine experimentation. But the extent of the concern based upon this point as presented in the rejection is misplaced because the components recited in the claims are those that are known in the field of priming mixtures. Therefore, and in the absence of objective reasons to expect that some particular combination thereof will result in a dangerous, spontaneously igniting mixture, the concern is not supported by the skill and understanding in the field.

Furthermore, and contrary to the assertion in the statement of the rejection, the skilled person in this field need not be a “genius” to arrive at priming mixtures that meet the needs of the field. To the contrary, the instant application provides sufficient disclosure of the claimed invention such that, when combined with the skill and knowledge in the art, the claims are enabled and no undue experimentation is necessary to practice the claimed invention.

In light of the above, Applicants respectfully submit that the instant rejection is misplaced and may be withdrawn.

***Rejection under 35 U.S.C. § 103(a)***

Claims 1-3, 5, 7, and 11-18 have been rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Mei et al. (‘252) in view of Erickson et al. and Mei et al. (‘736). Applicants have carefully reviewed the statement of the rejection as well as the cited references and believe that the claims as amended are definite for the following reasons.

The base reference by Mei et al. (‘252) describes priming mixes comprising a dinol type initiating explosive, like diazodinitrophenol, with boron and iron oxide. The mixes optionally

include tetrazene as a secondary explosive, and a nitrate ester fuel, such as PETN, nitrocellulose, or gun powder. See column 1, line 65, to column 2, line 12. Mei et al. ('252) provides no teaching or suggestion that the initiating dinol type explosive may be replaced by a nitrate ester fuel like PETN or nitrocellulose.

This is in sharp contrast to the instant claims, which do not comprise a dinol type explosive.

Erickson et al. (U.S. Patent 5,547,528) describes priming mixes that contain diazodinitrophenol (DDNP) and "eliminates the use of metallic oxidizing compounds" (see column 2, lines 16-42). Therefore, and to the extent that it may be combined with Mei et al. ('252), it would lead to the elimination of metallic oxidizing compounds, which are expressly present in the instant claims.

Mei et al. ('736), like Mei et al. ('252), also describes priming mixes comprising a dinol type explosive, like diazodinitrophenol (see column 2 through 4, especially the Examples and claims). Therefore, and like Mei et al. ('252), there is no teaching or suggestion that the dinol type explosive may be eliminated from a priming mixture and substituted by a nitroester or nitramine explosive.

In light of the above, Applicants respectfully submit that the pending claims, which do not comprise a dinol type explosive, are patentable over these cited references, alone or in combination. Withdrawal of the rejection is respectfully requested.

### **CONCLUSION**

In light of the above amendments and discussion, Applicants respectfully submit that the rejections of record may be withdrawn and that the claims are in condition for allowance. Applicants urge early indication of allowability and passage of the application to issue. The Examiner is welcome to contact the undersigned if further discussions may prove useful.

In the unlikely event that the transmittal letter is separated from this document and the Patent Office determines that an extension and/or other relief is required, Applicant petitions for any required relief including extensions of time and authorizes the Assistant Commissioner to

charge the cost of such petitions and/or other fees due in connection with the filing of this document to **Deposit Account No. 03-1952** referencing docket no. 321402000200.

Respectfully submitted,

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